providing an excitation light generated by the excitation light source to induce retinal auto-fluorescence in a subject retina, wherein the excitation light maximizes the excitation of flavoprotein auto-fluorescence and minimizes the excitation of non-flavoprotein auto-fluorescence;

capturing a single image representing the induced retinal auto-fluorescence immediately, to minimize inaccuracies introduced by eye movements and rapid physiological changes,

intensifying said immediately captured single image to increase the signal strength of the retinal autofluorescence; and

analyzing said immediately captured single image to determine apoptotic activity.

17. The method of claim **16**, including aligning a still camera.

18. The method of claim **16**, including aligning an image intensifier.

19. The method of claim **16**, including generating the excitation light at an excitation wavelength of about 460 nm.

20. The method of claim **16**, further including reducing the amount of ambient light presented to the subject retina.

21. The method of claim **16**, further including filtering the induced retinal autofluorescence to maximize the passage of flavoprotein auto-fluorescence and attenuate non-flavoprotein auto-fluorescence.

22. The method of claim **16**, wherein capturing a single image includes capturing an image representative of the autofluorescence specific to flavoproteins.

23. The method of claim **16**, further including analyzing the single image and comparing the single image with a second stored single image.

24. The method of claim **16**, wherein analyzing the single image further includes determining a local contrast change.

25. The method of claim **16**, wherein said step of analyzing the single image includes determining a rate of contrast change.

26. The method of claim **16**, further including aligning at least one objective lens between an image detection device and the subject retina.

27. A method of upgrading a standard imaging device to non-invasively measure apoptotic activity of a retina, the method comprising:

replacing a standard light source with an excitation light source for generating a filtered excitation light that maximizes the excitation of flavoprotein auto-fluorescence and minimizes the excitation of non-flavoprotein autofluorescence;

positioning an image detection device to detect a single image representing a retinal auto-fluorescence generated in response to the filtered excitation light immediately, to minimize inaccuracies introduced by eye movements and rapid physiological changes; and

increasing the intensity of the single image using an intensifier.

28. The method of upgrading a standard imaging device of claim **27**, further comprising positioning a filter between the image detection device and a subject retina to maximize the passage of flavoprotein auto-fluorescence and attenuate non-flavoprotein auto-fluorescence.

29. The method of upgrading a standard imaging device of claim **27**, wherein providing the excitation light source includes providing a mercury lamp.

30. The method of upgrading a standard imaging device of claim **27**, wherein providing the excitation light source includes providing a laser.

31. The method of upgrading a standard imaging device of claim **27**, wherein generating the filtered excitation light includes producing light at a wavelength of about 460 nm.

32. The method of upgrading a standard imaging device of claim **27**, further comprising positioning at least one objective lens to scale the detected signal image.

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